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**Things You Should Know**  
**about**  
**Your Roof**

JOENS-MARVILLE



FRANKLIN INSTITUTE  
PHILADELPHIA

U. S. N. 43140-2004

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## **THIS BOOK**

HAS BEEN PREPARED TO HELP OWNERS  
OF BUILDINGS TO REDUCE THEIR MAIN-  
TENANCE EXPENSE BY SHOWING THEM  
WHERE MOST ROOF TROUBLES START,  
AND HOW BEST TO PREVENT THEM



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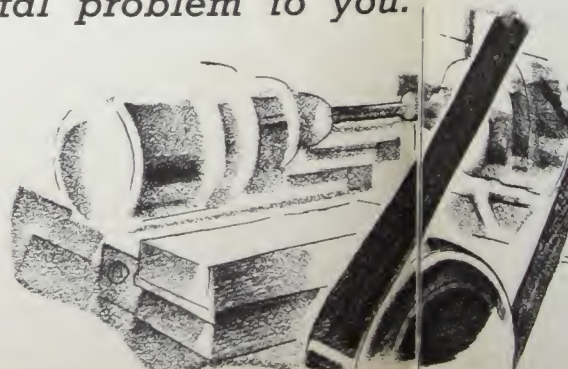


# THE MOST IMPORTANT FUNCTION OF A *KEEP OUT* the

1



*It is a well-known fact that the safety and protection of your equipment . . . and of the very structure itself . . . depends on your roof. To keep it watertight is a vital problem to you.*





ON  
OF A ROOF IS TO

# *the RAIN!*

2

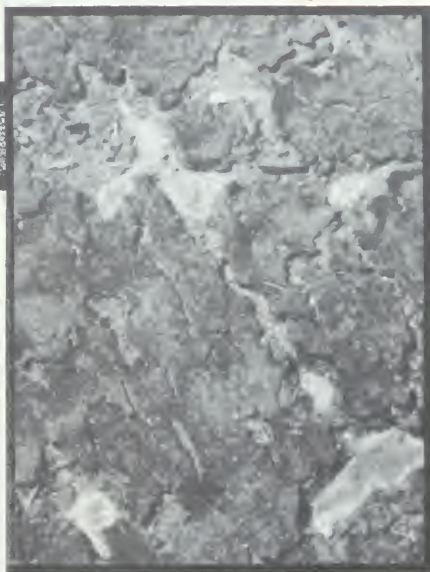
Photo of raindrop  
highly magnified

A raindrop can go through an opening the size of a pinhole, and cause expensive damage. Every tiny crack and crevice in a roof is a source of future expense.

THIS BOOK TELLS HOW YOU CAN REDUCE  
ROOF MAINTENANCE TO A MINIMUM



BUT THE *REAL ENEMY* OF A ROOF IS NOT  
... IT IS THE **SUN**



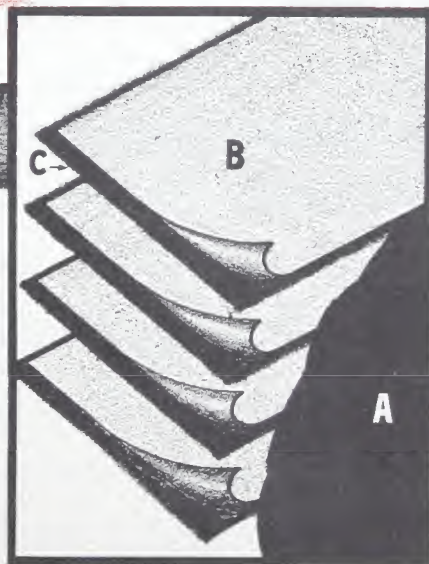
Here is what the sun has done to countless numbers of roofs. The surface coating has been eaten away and the sun is now attacking the felts themselves.

Result: *millions of pinholes through which raindrops can pass.*

Day after  
sun eat  
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from the

# IS NOT THE RAIN

Day after day — year after year — the sun eats away at the waterproofing agent on the surface (A), in the Roofing Felts themselves (B) and between the Felts (C). Without proper protection from the sun the roof will fail.



*This diagram shows how a built-up roof is made—layers of waterproof felts with a course of asphalt between.*

**THIS BOOK TELLS HOW TO PROTECT  
A ROOF AGAINST THIS MENACE**



WHEN THE SURFACE OF A ROOF SHOWS  
EXPERIENCE RECOMMENDS ONE OF

1

## A ROOF COATING

The periodic application of a good roof coating will help preserve the roof if the felts themselves are reasonably in good condition, with no considerable cracking. Do not, however, accept the often made claim that a coating will cure all roof troubles. Obviously, if the felts are too badly dried out, no roof coating can hope to accomplish the desired result of putting new life into them.

*Although Roof Coating is essential in lengthening the life of most roofs, remember it is a preservative like paint. You would not paint rotten woodwork and expect it to renew itself.*



BEFORE

• See to it that all loose shingles are nailed down with two nails where needed.

• See to it that the roof is securely fastened.

• See to it that the deck material is in good condition.



# SHOWS SIGNS OF DETERIORATION ONE OF TWO TREATMENTS



## 2

### RE-ROOFING

If the old felts have started to decay, the only safe thing to do is to cover or replace them with new felts.

#### BEFORE LAYING NEW FELTS OVER AN OLD ROOF, THESE IMPORTANT PRECAUTIONS MUST BE CAREFULLY OBSERVED

- See that all rotted boards are replaced and all loose boards securely nailed with at least two nails at each end and elsewhere where needed.
- See that all loose felts or blisters are slit and securely nailed down.
- See that any cracks in the old felts, due to deck movement, have been properly nailed and

stripped before new felts are applied.

- Be sure that old roofing is swept clean and then thoroughly cleaned with a mixture of primer and thinner. This assures a good bond with the cementing agent.
- When re-roofing a gravel roof, see that all gravel is removed first. Any gravel left on the roof may puncture the new felts.

*When laying roofing felts*

— THE CAREFUL WORKMAN WILL  
CHECK ON THESE **3** IMPORTANT POINTS ...



*They make the difference between a  
roof that will last and one that won't*



✓ **NAILING ON STEEP DECKS**

Suitable nailing facilities must be provided on all steep decks — else the roof may slide or blow off. Felts must be nailed in accordance with specifications.

✓ **CORRECT APPLICATION OF CEMENTING AGENT**

The cementing agent must not be mopped too far ahead of the felt, else the cement will chill and the felts will not stick.

✓ **CORRECT FLASHING**

New flashing must be installed where necessary. A poorly flashed roof is little better than one without flashing. The roofing felt must never be turned up to act as flashing. To do so means to invite disastrous cracks and leaks.

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CORRECT C  
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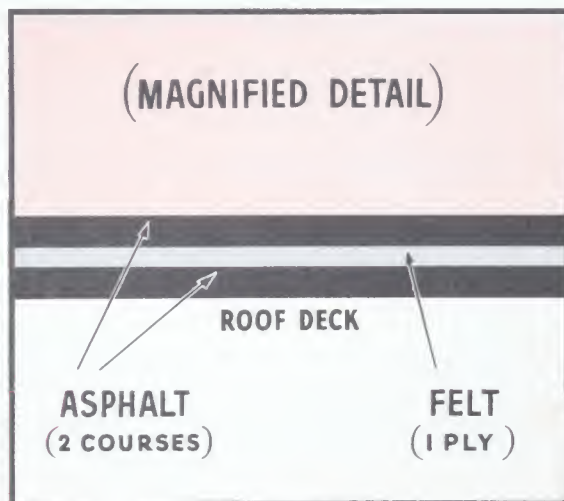


# WARNING!

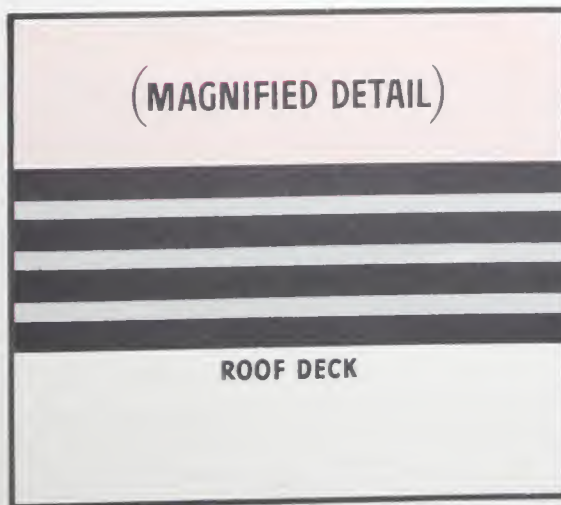
When you buy a roof, be sure  
you get what you specify . . .

. . . For example, know the difference between a "3-ply" roof and a "3-course" roof.

MANY TIMES THIS IS CALLED  
A "3-PLY" ROOF. NOTE THAT IT  
HAS ONLY 1 PLY OF FELT! ITS  
CORRECT CLASSIFICATION IS  
"3-COURSE"



THIS  
IS A  
*genuine*  
3-PLY ROOF



NOTE THAT IT HAS THREE  
PLIES OF FELT AND FOUR  
COURSES OF ASPHALT —  
7 COURSES IN ALL

*If you are considering re-roofing –*

*why not  
buy an*

# **INSULATED**

- An insulated roof keeps out summer heat—makes top floors cool and comfortable.
- An insulated roof SAVES FUEL and keeps warmth from escaping in winter.
- Insulation prevents condensation and roof drip . . . protects the roofing felts . . . minimizes cracking.

ROOF



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ROOFIN



# ROOF? ... *It pays for itself!*



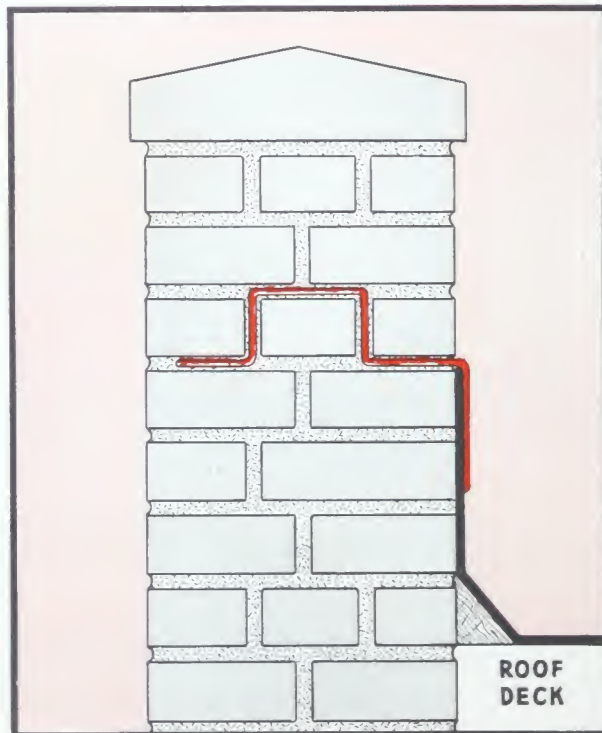
We recommend the application of J-M RIGID ROOFINSUL before the new roofing felts are laid

*NOTE: Insulation should always be laid over a protecting felt to eliminate the possibility of moisture entering from the under side.*

Now let's consider the *Five Critical Areas of a roof*

## CRITICAL AREA **1** ★ THE FLASHING

[ Flashing is the method of protecting the angle  
between the roof and any vertical surface ]



*"Through-the-Wall" Flashing*

IN NO OTHER PLACE ON THE  
ROOF ARE EXPERIENCE AND WORK-  
MANSHIP MORE IMPORTANT. 75% OF  
ALL LEAKS OCCUR AT FLASHINGS.

The time to obtain the ideal flashing is while the parapet wall is being built. For absolute protection the flashing should go through the wall as shown in this diagram. If this is done, driving rain will be unable to seep through the wall and behind the flashing.

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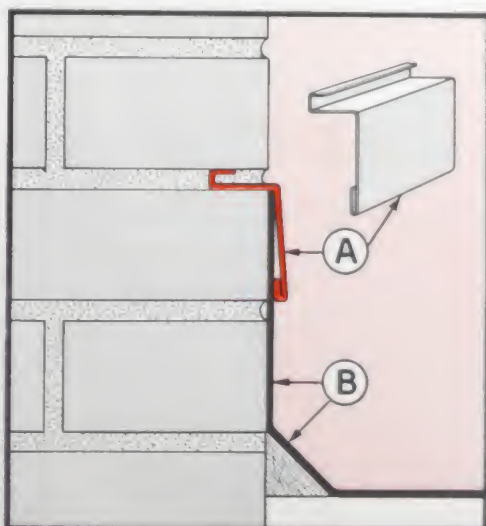
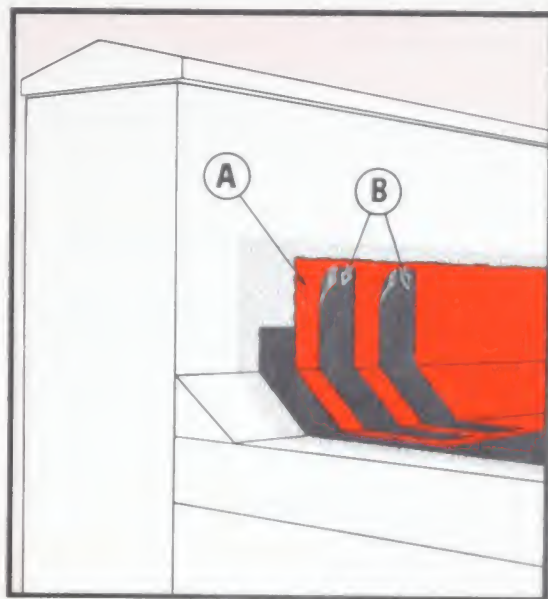


ON RE-ROOFING WORK, WHERE "THROUGH-THE-WALL" FLASHING IS IMPOSSIBLE, THESE METHODS ARE STRONGLY RECOMMENDED

## AGAINST CONCRETE

*(Where No Nailing Facilities Are Provided)*

The ideal flashing under these conditions is built up of successive layers of J-M Asbestile (A) and J-M Asbestos Felts (B), applied to the masonry wall and turned out on the roof. Asbestile is a cementing agent which, when hard, becomes an integral part of the wall itself.

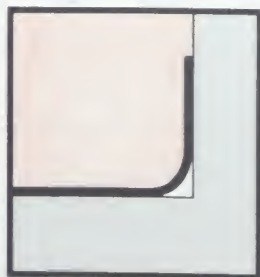


## AGAINST BRICK

Metal cap flashing (A) is inserted at least 1 inch into the mortar between brick courses. Then it laps over the base flashing (B) so as to keep water from seeping down between the base flashing and the surface of the wall.

## HERE'S A SIMPLE FLASHING PRECAUTION OFTEN NEGLECTED BY MANY ROOFERS

Since it is practically impossible to turn up felts at a right angle and have a tight bond, we use a triangular piece of wood or J-M Insulating Board as shown in the diagram. Felts can be properly cemented when this "cant" strip is used.

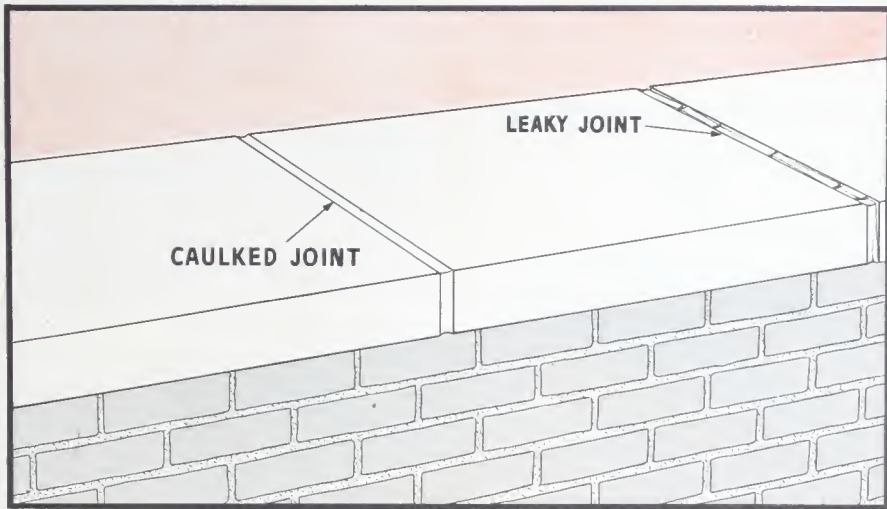


### HOW **NOT** TO DO IT

This method of application leaves a weak spot—the felts may crack and easily become broken if some one steps close to the wall. Some roofers do it this way either through inexperience or desire to quote a bargain price.



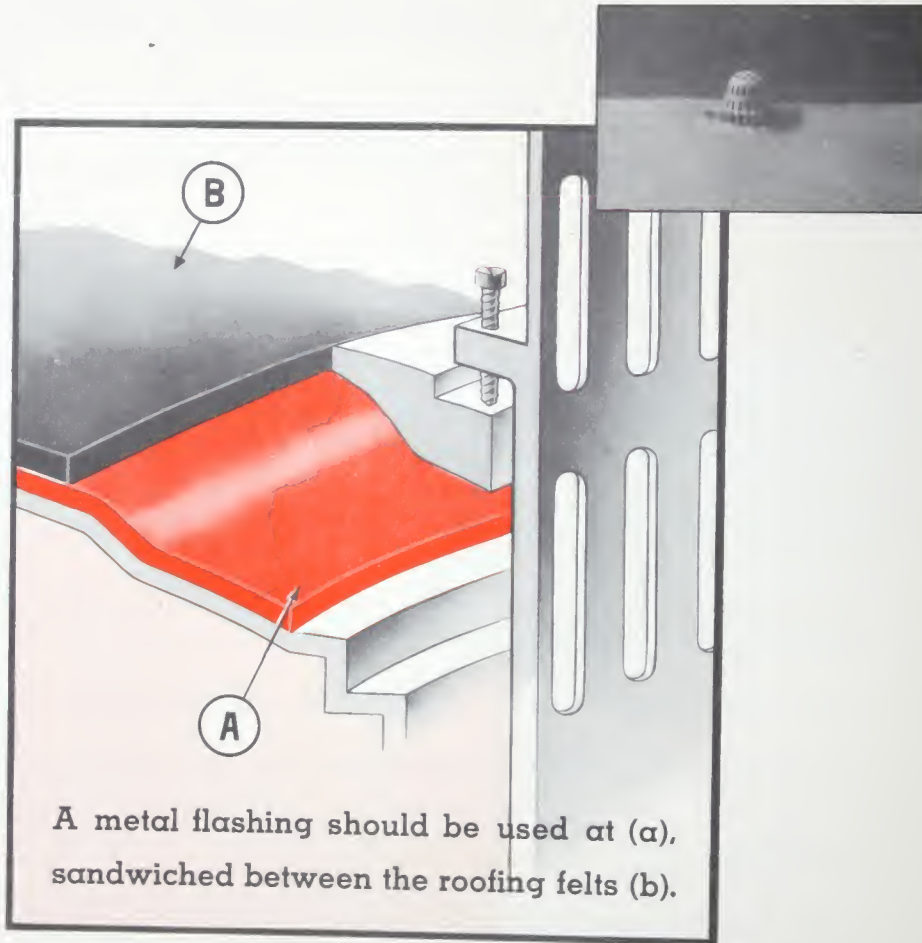
# THE COPING



The mortar between the coping stones on a parapet wall often dries out and allows moisture to seep down through the wall and under the roofing felts. A good caulking compound should be applied in these joints. This precaution should always be taken where "through-the-wall" flashing was neglected when the wall was built.

# 3 CRITICAL AREA

## DRAINS



### HOW **NOT** TO DO IT

Inexperienced roofers often try to save money at this point and flash with roofing felts instead of metal. This is never safe because the felt cannot be made to lie flat and tight around a circular opening.

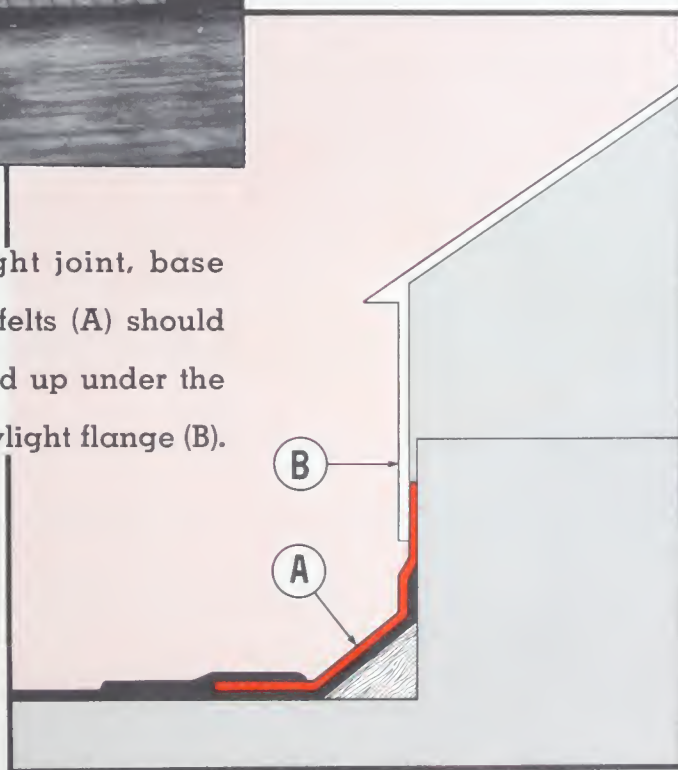


# CRITICAL AREA **4**

## SKYLIGHTS



For a tight joint, base flashing felts (A) should be carried up under the metal skylight flange (B).

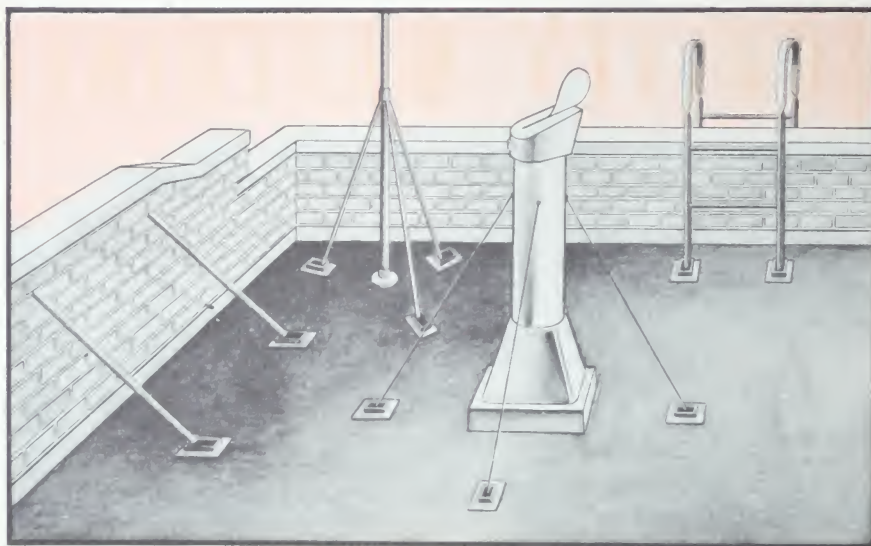


### HOW **NOT** TO DO IT

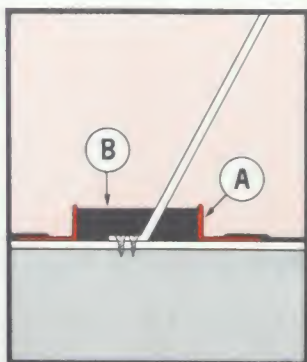
Many roofers neglect to use a base flashing and run the roofing felts themselves up under the metal flange. This method may cause leaks.

CRITICAL AREA  
**5**

# ANGLE SUPPORTS



Leaks often develop where angle supports are fastened through the roofing after it has been applied – a guy wire



fastening is a good example. For such places, we recommend a "pitch pocket" – a copper collar (A) set around the fastening and filled with a plastic or hot asphalt (B).

## HOW **NOT** TO DO IT

A careless roofer often merely plugs the edge of the hole with asphalt or putty... a method that is never safe!

Exp  
only



*Experience and Workmanship are  
only part of the story of a good roof*

# QUALITY MATERIALS

*are equally important*



WE USE JOHNS-MANVILLE ROOFING MATERIALS  
WHICH HAVE BEEN RECOGNIZED FOR THEIR  
HIGH QUALITY FOR OVER TWO GENERATIONS

# J-M MAKES THE RIGHT MATERIAL

*for every kind of a roof*



*for*  
SMOOTH  
*surfaces*

ASPHALT-SATURATED ASBESTOS FELTS  
ASPHALT-SATURATED RAG FELTS

*for*  
SLAGGED  
*surfaces*

TAR-SATURATED ASBESTOS FELTS  
TAR-SATURATED RAG FELTS  
ASPHALT-SATURATED RAG FELTS

*Also*

J-M RIGID ROOFINSUL \* SLATE-SURFACED SPLIT-SHEET ROOFING

J-M ASBESTILE SYSTEM OF FLASHING \* J-M ROOF COATINGS

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## J-M ALSO FURNISHES DETAILED ENGINEERING DATA ON ROOF APPLICATION

J-M Engineering Service includes detailed instruction sheets on every type of roof. These sheets are for the Approved Roofer's guidance. In addition, J-M engineers are available at all times to give expert information on all roofing or flashing problems.





## A SCENE IN THE J-M RESEARCH LABORATORY

— the largest roofing laboratory in the world, which is constantly testing Johns-Manville Roofing Materials in order to maintain a uniformly high quality.

*20 years old . . .* **OR MORE!**

These J-M Smooth-Surfaced Asbestos Roofs testify to the importance of good materials and good workmanship.





22 Years "old" at Bluefield, West Virginia - Huff, Andrews and Thomas Company

25 Years "old" at Beach Grove, Indiana - Big Four Railroad

22 Years "old" at Seattle, Wash. -  
Port of Seattle

23 Years "old" at Kansas City, Mo. - Kansas City Star

23 Years "old" at Louisville, Kentucky -  
American Medicinal Spirits Company

20 Years "old" at Springfield, Ohio - Duplex Mill & Mfg. Co.

23 Years "old" at Seattle,  
Washington - OWRR & N Co.

22 Years "old" at Chicago, Ill. - Reid, Murdock & Company

22 Years "old" at San Francisco, Calif. - Gantner & Mattern

35 Years "old" at Newark, N. J. - General Leather Company

Years "old" at Watertown, N. Y. - Bagley and Sewall Company

## THE J-M **"MILLION-DOLLAR-TO-LEND"** PLAN

**makes it possible for you to have the work  
done now — and pay out of income**



*GOVERNMENT RATES . . . NO DOWN PAYMENT*



**I**f lack of ready cash has caused you to postpone repairing your roof, it need do so no longer, for Johns-Manville stands ready to extend credit to you, so that you can have the work done at once, with no down payment, and a year or more to pay in easy monthly installments.

Operating under the terms of the National Housing Act, the J-M Deferred Payment Plan has enabled thousands of home owners and business executives to improve their property on the most liberal terms ever offered for this type of work.

Before another rainy season comes — before you submit your roof to the rigors of another hard winter, let us tell you how little it really will cost to finance this important work under the Johns-Manville Plan.

JOHNS-

A J-M


is your

give you



# **JOHNS-MANVILLE'S METHOD OF SELECTING A J-M APPROVED ROOFING CONTRACTOR**

**is your assurance that we are qualified to  
give you a quality roofing job**



THESE ARE THE REQUIREMENTS WHICH J-M  
INSISTS SHALL BE FULLY MET BY A ROOFING  
CONTRACTOR, BEFORE HE IS PERMITTED TO BE-  
COME A J-M APPROVED ROOFING CONTRACTOR.



He must have a well-established business.



He must occupy a respected position in  
the community.



He must have a high standing with local  
architects and building contractors.



He must be financially sound.



His standards of workmanship, as shown  
by actual jobs, must meet the approval of  
J-M Engineers.

*In soliciting your business, we offer you*

**EXPERIENCE • INTEGRITY**

**QUALITY MATERIALS**

*We sincerely believe that this combination will give  
you the best roof you can pay for the money you spend.*



*May we make a careful survey of your roof and give  
you a report of our findings? There's no obligation.*